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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/788,863

02/27/2004

Joseph H. Sassine

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09/12/2006

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EXAMINER

WATKO, JULIE ANNE

ART UNIT

PAPER NUMBER

2627

DATE MAILED: 09/12/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/788,863

Applicant(s)

SASSINE ET AL.

Examiner

Julie Anne Watko

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-25 is/are pending in the application.
- 4a) Of the above claim(s) 21-25 is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1-20 is/are rejected.
- 7) ☐ Claim(s) ____ is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 27 February 2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. ____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. ____. |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date <u>02/27/2004</u> . | 6) <input type="checkbox"/> Other: ____. |

DETAILED ACTION

Election/Restrictions

1. Restriction to one of the following inventions is required under 35 U.S.C. 121:
 - I. Claims 1-20, drawn to a head suspension assembly, classified in class 360, subclass 244.8.
 - II. Claims 21-25, drawn to a method of fabricating a vibration resistant head suspension assembly, classified in class 29, subclass 603.04.

The inventions are distinct, each from the other because of the following reasons:

2. Inventions II and I are related as process of making and product made. The inventions are distinct if either or both of the following can be shown: (1) that the process as claimed can be used to make another and materially different product or (2) that the product as claimed can be made by another and materially different process (MPEP § 806.05(f)). In the instant case the process as claimed can be used to make another and materially different product, such as a product devoid of a hinge component.
3. Because these inventions are independent or distinct for the reasons given above and have acquired a separate status in the art in view of their different classification, restriction for examination purposes as indicated is proper.
4. During a telephone conversation with David Fairbairn (Reg. No. 26047) on July 12, 2006, a provisional election was made without traverse to prosecute the invention of group I, claims 1-20. Affirmation of this election must be made by applicant in replying to this Office action. Claims 21-25 are withdrawn from further consideration by the examiner, 37 CFR 1.142(b), as being drawn to a non-elected invention.

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5. Applicant is reminded that upon the cancellation of claims to a non-elected invention, the inventorship must be amended in compliance with 37 CFR 1.48(b) if one or more of the currently named inventors is no longer an inventor of at least one claim remaining in the application. Any amendment of inventorship must be accompanied by a request under 37 CFR 1.48(b) and by the fee required under 37 CFR 1.17(i).

Information Disclosure Statement

6. The information disclosure statement filed February 27, 2004, fails to comply with 37 CFR 1.98(a)(3) because it does not include a concise explanation of the relevance, as it is presently understood by the individual designated in 37 CFR 1.56(c) most knowledgeable about the content of the information, of each patent listed that is not in the English language. It has been placed in the application file, but the information referred to therein has not been considered.

Claim Rejections - 35 USC § 112

7. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

8. Claims 1-20 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 1 recites the limitation "high stiffness and high damping capacity" in the last line. Claim 16 recites the limitation "high stiffness and high damping capacity" in line 5. The term "high" in claims 1 and 16 is a relative term which renders the claim indefinite. The term "high" is not defined by the claim, the specification does not provide a standard for ascertaining the

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requisite degree, and one of ordinary skill in the art would not be reasonably apprised of the scope of the invention. It is unclear how high is high enough to fall within the metes and bounds of the claims.

Claim 4 recites the limitation "springy" in line 2. The term "springy" in claim 4 is a relative term which renders the claim indefinite. The term "springy" is not defined by the claim, the specification does not provide a standard for ascertaining the requisite degree, and one of ordinary skill in the art would not be reasonably apprised of the scope of the invention. It is unclear how springy is springy enough to fall within the metes and bounds of the claims.

Other elected claims are indefinite by virtue of their dependency from indefinite claims.

Claim Rejections - 35 USC § 102

9. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

10. Claims 1, 4, 12-15 and 16 are rejected under 35 U.S.C. 102(b) as being anticipated by Nakamura et al (US Pat. No. 6212043 B1).

Due to similarities in the claimed subject matter, the independent claims are treated together.

As recited in independent claims 1 and 16, to the extent understood, Nakamura et al show a head suspension assembly comprising a beam component (see position b in Fig. 6C) having a

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front (left in Fig. 6C) end and a rear (right) end; a hinge component 43, wherein the hinge component 43 comprises a first structural damping material 14 having high stiffness and high damping capacity, and the hinge component is at the rear (right) end of the beam component; and a gimbal component (to which 1 is attached; see appearance of Figs. 2A-C, for example) near the front (upper in Fig. 2A-C) end of the beam component for connecting to a slider assembly 1 carrying a transducer (see col. 1, line 17, “to effect read/write”).

Regarding the limitation “for connecting to an actuation means”: A recitation of the intended use of the claimed invention must result in a structural difference between the claimed invention and the prior art in order to patentably distinguish the claimed invention from the prior art. If the prior art structure is capable of performing the intended use, then it meets the claim.

The product by process limitations in these claims (e.g., “separately made and attached”) are directed to the product per se, no matter how actually made, *In re Hirao*, 190 USPQ 15 at 17 (footnote 3). See also *In re Brown*, 173 USPQ 685; *In re Luck*, 177 USPQ 523; *In re Fessman*, 180 USPQ 324; *In re Avery*, 186 USPQ 161; *In re Wertheim*, 191 USPQ 90 (209 USPQ 554 does not deal with this issue); *In re Marosi et al*, 218 USPQ 289; and particularly *In re Thorpe*, 227 USPQ 964, all of which make it clear that it is the patentability of the final structure of the product “gleaned” from the process limitations or steps, which must be determined in a “product by process” claim, and not the patentability of the process limitations. Moreover, an old or obvious product produced by a new method is not a patentable product, whether claimed in “product by process” claims or not. Note that the applicant has the burden of proof in such cases, as the above case law makes clear.

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As recited in claim 4, to the extent understood, Nakamura et al show that the first structural damping material is springy (see table 1, "Change in spring constant" column).

As recited in claim 12, Nakamura et al show that the structural damping material 14 is a laminate comprising a stainless steel layer 15 and a damping material 16 layer.

Regarding claims 13 and 15: See above discussion of "product by process" claims.

As recited in claim 14, Nakamura et al show that the hinge component 15 is attached to the beam component through an adhesive 16.

11. Claims 1-6, 8 and 11-20 are rejected under 35 U.S.C. 102(e) as being anticipated by Sassine et al (US PAP No. 2005/0135013 A1).

The applied reference has a common inventor with the instant application. Based upon the earlier effective U.S. filing date of the reference, it constitutes prior art under 35 U.S.C. 102(e). This rejection under 35 U.S.C. 102(e) might be overcome either by a showing under 37 CFR 1.132 that any invention disclosed but not claimed in the reference was derived from the inventor of this application and is thus not the invention "by another," or by an appropriate showing under 37 CFR 1.131.

As recited in independent claims 1 and 16, to the extent understood, Sassine et al show a head suspension assembly (see Fig. 15 or Fig. 16, for example) comprising a beam component 400 having a front (right end in Figs. 15-16) end and a rear (left) end; a hinge component ("hinge area", see, e.g., ¶ 0056), wherein the hinge component comprises a first structural damping material (414, for example) having high stiffness (see ¶ 0056, "Stiffness") and high damping capacity (see ¶ 0062, "especially effective in significantly attenuating gain of resonance modes"), and the hinge component is at the rear (left) end of the beam component; and a gimbal

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component (see, e.g., ¶ 0058, “gimbal”) near the front end of the beam component for connecting to a slider assembly 409 carrying a transducer (see ¶ 0058, “read/write”).

Regarding the limitation “for connecting to an actuation means”: A recitation of the intended use of the claimed invention must result in a structural difference between the claimed invention and the prior art in order to patentably distinguish the claimed invention from the prior art. If the prior art structure is capable of performing the intended use, then it meets the claim.

The product by process limitations in these claims (e.g., “separately made and attached”) are directed to the product per se, no matter how actually made, *In re Hirao*, 190 USPQ 15 at 17 (footnote 3). See also *In re Brown*, 173 USPQ 685; *In re Luck*, 177 USPQ 523; *In re Fessman*, 180 USPQ 324; *In re Avery*, 186 USPQ 161; *In re Wertheim*, 191 USPQ 90 (209 USPQ 554 does not deal with this issue); *In re Marosi et al*, 218 USPQ 289; and particularly *In re Thorpe*, 227 USPQ 964, all of which make it clear that it is the patentability of the final structure of the product “gleaned” from the process limitations or steps, which must be determined in a “product by process” claim, and not the patentability of the process limitations. Moreover, an old or obvious product produced by a new method is not a patentable product, whether claimed in “product by process” claims or not. Note that the applicant has the burden of proof in such cases, as the above case law makes clear.

As recited in claims 2 and 19, Sassine et al show that the hinge component is made from the first structural damping material (414, for example), and the gimbal is made from a second structural damping material (420 or 444, for example).

As recited in claims 3 and 20, Sassine et al show that the first structural damping material 414 and the second structural damping material 420 are substantially identical in composition (see ¶ 0055, “polyimide”).

As recited in claim 4, to the extent understood, Sassine et al show that the first structural damping material is springy (see ¶ 0055, “two steel sheets sandwiching a polyimide”).

As recited in claim 5, Sassine et al show that the hinge component (“hinge area”, see, e.g., ¶ 0056) applies a preload (“preload bend”, see ¶ 0057) on the transducing head 409 through the beam component 400.

As recited in claims 6 and 17, Sassine et al show that the entire hinge component is substantially made from the first structural damping material only (the term “first structural damping material” is broad enough to include a laminate, as evidenced by claim 12; thus, the etched laminate which constitutes the hinge component in Fig. 15 satisfies the limitation “substantially made from the first structural damping material only”).

As recited in claim 8, Sassine et al show that the hinge component has no external structural damping material attached thereto (see Fig. 15).

As recited in claims 11 and 18, Sassine et al show that the structural damping material is an alloy (see ¶ 0059, “blend of two or more materials”).

As recited in claim 12, Sassine et al show that the structural damping material is a laminate comprising a stainless steel layer and a damping material layer (see ¶ 0055, “two steel sheets sandwiching a polyimide (or other material) core”).

Regarding claims 13-15: See above discussion of “product by process” claims.

Claim Rejections - 35 USC § 103

12. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

13. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

14. Claims 9-10 are rejected under 35 U.S.C. 103(a) as being unpatentable over Nakamura et al (US Pat. No. 6212043 B1) in view of Zamanzadeh et al (US Pat. No. 6361740 B1).

Nakamura et al show a head suspension assembly as described above.

As recited in claim 9, Nakamura et al show that the structural damping material has a modulus of elasticity greater than 30 gigapascals (see table 1, example 3, which shows a modulus of elasticity of $20000 \text{ kg/mm}^2 > 30 \text{ gigapascals}$).

As recited in claim 10, Nakamura et al show that the structural damping material has a modulus of elasticity greater than 50 gigapascals (see table 1, example 3, which shows a modulus of elasticity of $20000 \text{ kg/mm}^2 > 50 \text{ gigapascals}$).

Nakamura et al, however, are silent as to the ranges of damping capacity set forth in claims 9-10.

It is notoriously old and well known in the magnetic head art to routinely modify a magnetic head structure in the course of routine optimization/ experimentation and thereby obtain various optimized ranges of damping capacity, including those set forth in claims 9-10. See, for example, Zamanzadeh et al, col. 2, lines 53-60, "If the resonant vibrations are not damped promptly and effectively, the elevational excursions of the load beam may cause damage to the surface of the disk, the transducer and/or the load beam or result in data track mis-registration and read-write errors. It is, therefore, desirable to provide a load beam, or any similar flexure used in a disk drive, having a high damping capacity."

It would have been obvious to a person having ordinary skill in the art at the time the invention was made to have had the magnetic head of Nakamura et al satisfy the range set forth in claims 9-10. The rationale is as follows: one of ordinary skill in the art would have been motivated to have had the magnetic head of Nakamura et al satisfy the range set forth in claims 9-10 in order to prevent damage to a surface of a disk, a transducer and/or a load beam, and to prevent track mis-registration and read/write errors as taught by Zamanzadeh et al (col. 2, lines 53-60).

Moreover, absent a showing of criticality (i.e., unobvious or unexpected results), the ranges set forth in claims 9-10 are considered to be within the level of ordinary skill in the art.

Additionally, the law is replete with cases in which when the mere difference between the claimed invention and the prior art is some range, variable or other dimensional limitation within the claims, patentability cannot be found.

It furthermore has been held in such a situation, the Applicant must show that the particular range is critical, generally by showing that the claimed range achieves unexpected results relative to the prior art range. *In re Woodruff*, 919 F.2d 1575, 1578, 16 USPQ2d 1934, 1936 (Fed. Cir. 1990).

Allowable Subject Matter

15. Claim 7 would be allowable if rewritten to overcome the rejection(s) under 35 U.S.C. 112, 2nd paragraph, set forth in this Office action and to include all of the limitations of the base claim and any intervening claims.

Conclusion

16. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Yamada et al (US Pat. No. 4734805) show adhesive flexible resin 25 attached to resilient section 20 of suspension element 10 to function as a damper (see especially col. 3, line 56-col. 4, line 10).

Zhu (US Pat. No. 5949617) shows a suspension comprising a dynamic absorbing member located in a hinge area (see 19 in Figs. 5A-B; see also col. 4, lines 55-60, "Dynamic absorbers can be placed anywhere along the length of the suspension including within the standard cavity locations taken by trapezoidal-like cutout 19").

Erpelding (US Pat. No. 7054109 B2) shows a damped suspension comprising a load beam made of a non-spring material chosen to enhance vibration damping, formed separately from a stainless steel hinge portion (see especially col. 5, line 51-col. 6, line 62).

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Arya (US PAP No. 20030202284 A1) shows a suspension with integral constrained and sandwiched layer damping (see ¶ 0011-0013, which discuss advantages and disadvantages of separately formed and integral dampers; see especially ¶ 0013, “being discrete elements, dampers can only be applied in selected locations and cannot be applied in the load beam hinge area (where they would be most effective) due to adhesion problems”).

Berding et al (US PAP No. 20040120078 A1) show a suspension comprising adhesive layers 174 and 176 (see Fig. 10, for example) wherein “the hinge provides damping capability” (see ¶ 0122).

17. Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

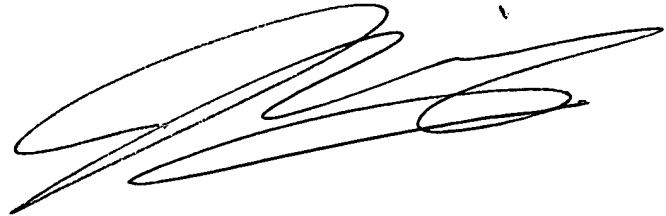
Any inquiry concerning this communication or earlier communications from the examiner should be directed to Julie Anne Watko whose telephone number is (571) 272-7597. The examiner can normally be reached on Monday through Friday, 1PM to 10PM.

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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Dwayne D. Bost can be reached on (571) 272-7023. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Julie Anne Watko, J.D.
Primary Examiner
Art Unit 2627

September 7, 2006
JAW

A handwritten signature in black ink, appearing to read 'Julie Anne Watko', with a stylized, cursive script.